Naval Special Warfare Nutrition

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Editor's Note

This content was originally posted by Mike Caviston in an online form. All I have done is format his material into a printable document. Any edits I have made are for readability, but none of the content has been changed.
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https://www.sealswcc.com/forums/forum/fitness/nutrition-aa/150-nutrition-start-here

Athletic Nutrition

Here are some nutrition concepts pertaining to athletes (and therefor BUD/S and SWCC candidates). These and other points will be discussed more fully in the future.

Diet

Diet refers to the sum total of all the foods we eat. Don't think in terms of bad foods that can never be eaten (unless of course you are allergic, such as shellfish or peanuts). However, there are foods that should be eaten infrequently and in small quantities, because they lack nutrients or may be harmful in large concentrations. There are no magic foods that guarantee good performance - but there are foods that are highly nutritious and should be eaten fairly frequently. There is plenty of room for personal preference, and you can skip foods you just plain don't like if you look for nutritious alternatives. Every meal doesn't have to be perfect, but an optimal diet for health and performance will on the whole have a good mix of foods from various categories.

Variety

Variety is a key element of good nutrition. Don't fall into a rut and eat the same foods or meals day after day. Make an effort to seek out new nutrient-dense foods and make them part of your diet. A simple strategy: try to get many different colors on your plate at mealtime.

Make sure your diet meets your **energy needs**. If you have a healthy body composition and are beginning strenuous physical training, make sure to increase your food intake accordingly. If you need to lose some excess body fat, you need to achieve a negative calorie balance by making sure your activity level is a little greater than your food intake. Cut back on empty calories, but make sure to still eat enough to get adequate nutrients (energy + vitamins and minerals).

Accept **information** about nutrition from trusted, credible sources. Learn to recognize and avoid Fad Diets. The Internet contains a lot of information - and misinformation.

A general framework for discussing nutrition is to consider the **relative proportion of calories** from carbohydrates, proteins, and fats (abbreviations: CHO, PRO, and FAT) in the diet. Each of these energy-providing nutrients is essential to health and performance. Experts from the Department of Health and Human Services (HSS) and the Department of Agriculture (USDA) review the most current scientific and medical research, and provide guidelines for CHO, PRO, and FAT content in the diet. A broad range of values is acceptable: 45-65% of total calories for CHO; 10-35% of total calories for PRO; and 20-35% of total calories for FAT. My specific recommendations for BUD/S and SWCC candidates are to get enough carbohydrates in the diet to support strenuous physical training, to get adequate but not excessive amounts of protein, and the balance of calories from healthy fats.

If you are eating lots of food from a variety of nutritious categories, it is unlikely you will be **deficient** in any vitamins or minerals. Even so, I encourage candidates to eat a variety of foods that are good sources of calcium, iron, potassium, and magnesium. Non-food supplements won't be necessary except in a few cases with medical causes (e.g., lactose tolerance; anemia). While a multivitamin may not be necessary, a single-RDA multivitamin supplement will not be harmful. (Note that vitamins are supplements, and supplements are not allowed during the selection and training pipelines.) Look for a supplement with a U.S. Pharmacopeia (USP) logo. Avoid high concentrations of single vitamins or minerals.

Supplements

Avoid protein **supplements** or other commercial performance-enhancing products, including energy drinks such as Red Bull, Rockstar and Monster. The reasons range from expense, to ineffectiveness, to danger in excessive amounts, and the possibility of unknown harmful contaminants.

Hydration

Hydration is an oldie but a goodie. Drink plenty of fluids, mostly water, throughout the day. It's not enough to drink shortly before, during, and after exercise. When you are training hard, you need to get into the habit of aggressively hydrating all day long. Urine output should be fairly high and relatively clear. You should wake up at night to use the bathroom, or at least have a strong need to urinate first thing in the morning.

Resources

Some Nutrition Resources:

Evidence-based information on Nutrition and Athletic Performance (joint position statement by the American College of Sports Medicine, the American Dietetic Association, and Dieticians of Canada):
http://journals.lww.com/acsm-msse/Fulltext/2009/03000/Nutrition_and_Athletic_Performance.27.aspx

National Athletic Trainers' Association Position Statement: Evaluation of Dietary Supplements for Performance Nutrition
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3554028/pdf/i1062-6050-48-1-124.pdf

Human Performance Research Center (A DoD initiative under the Force Health Protection and Readiness Program)
http://hprc-online.org/

Dietary Guidelines for Americans 2015
http://health.gov/dietaryguidelines/2015/

USDA National Nutrient Database (search for nutrient info on various foods)
http://ndb.nal.usda.gov/

Alcohol and Performance

Alcohol and Performance
(Originally posted on October 29, 2009)

Alcohol consumption has long been a part of the tough-guy culture of communities ranging from sports teams to law enforcement to the military. These people typically work hard and play hard. Going out drinking with your buddies after a tough week of training is generally seen as a legitimate way of letting off steam, and the ability to drink more than one's peers is often considered a positive quality. I am not interested in debating the value of alcohol in society or listing the many hazards associated with excessive alcohol consumption, since these are thoroughly documented elsewhere.

What I want to address are the potential effects of moderate alcohol consumption on physical performance and the adaptations to physical training. I am not talking about an amount that would make you drunk or cause you to blow beyond the legal limit on an alcohol breath test. I am talking about the possible effects that a couple drinks on the weekend might have a couple days later, such as might happen to a BUD/S student relaxing and having a couple beers while watching a ball game on Saturday night and then having to perform a 4-mile run at 0600 Monday morning. The alcohol consumed in the beer would be metabolized in a matter of hours, but alcohol disrupts the function of a number of enzymes that regulate the metabolic reactions responsible for physical performance. It might be more than 48 hours before these disruptions are returned to normal.

Effects of Low-Moderate Alcohol Consumption on Performance

Here are some of the acute effects of alcohol consumption on physical performance and adaptations to training:

- Decreased aerobic capacity (ability to utilize oxygen to liberate energy during muscular contractions)
- Decreased lactate threshold (more lactate accumulates in the muscles for a given amount of work, a condition associated with quicker fatigue)
- Increased dehydration (due to the diuretic effects of alcohol)
- Reduced glycogen content in muscles (glycogen is the storage form of carbohydrate and is the primary fuel used by muscles; lack of glycogen is the primary cause of fatigue during physical evolutions that require stamina or endurance)
- Decreased protein synthesis and increased protein catabolism (resulting in failure to add muscle or even loss of muscle mass)
- Deceased ability to regulate body heat (resulting in a greater heat load for a given amount of work performed)
- Interrupted sleep patterns (less rest and recovery)
- Suppressed immune system, meaning increased susceptibility to bacteria and infectious diseases
- Increased Rating of Perceived Exertion (RPE) for a given workload, which means a pace that would ordinarily be comfortable will feel harder, and a pace that would ordinarily be difficult may become intolerable

In all honesty, these effects are not likely to be extreme after only a couple beers, but they will be measurable. Some people will be more strongly affected by a given amount of alcohol than others, and the greater the amount of alcohol consumed, the greater the effects on anybody. Even relatively small amounts of alcohol consumed regularly will chip away at the gains in endurance and strength you are trying to make through training. A single bout of drinking may be enough to keep you from hitting your target on a PST or other timed evolution, if you are on the bubble. Every individual must weigh the pros and cons of alcohol against his own abilities and goals. For example, students in BUD/S may choose to celebrate the completion of another week of training by having a couple drinks with their classmates. It is a good mental strategy to create rewards for yourself during intense training to help motivate you from one stage to the next, but it should go without saying it is counterproductive to negate the effects of training with excessive consumption of alcohol.

The effects of drinking a couple beers aren't permanent, but they last long enough to disrupt training, even slightly. For a day or two, you won't be able to run quite as hard or as long as you would have, or your muscles won't respond to your weight sessions the way they should. Repeat this pattern often enough, and the little bits missed here and there add up to a lot of missed opportunity. Drinking is a personal choice, but if you are committed to doing everything possible to maximize your physical abilities, you may ask yourself if alcohol is a reward you simply can't live without.

Fad Diets

Recognizing Fad Diets

SEAL and SWCC candidates need to optimize their nutrition to maximize health and performance and increase the probability of making it through the selection process. Seek nutrition information from valid, qualified sources. There is a multi-billion dollar industry built around diet books and nutrition websites, and people are willing to pay big bucks to get what they hope will be a ticket to weight loss as well as gains in strength and endurance. I've preached the need for basing diet on sound principles of the science of nutrition, so I won't burden you with a long lecture here. But when planning your nutrition, I encourage you to be aware of the existence of Fad Diets. Their popularity comes from good marketing more than verified results. Here are some signs to watch for:

- Recommendations that promise a quick fix
- Claims that sound too good to be true
- Lists of "good" and "bad" foods
- Overemphasize benefits of some foods; overemphasize dangers or negative effects of other foods
- Eliminates entire groups of foods
- Emphasizes combining foods in certain ways or avoiding certain combinations of foods
- Requires specific ratios of carbohydrates, fats and proteins
- Rigid menu plan with limited food choices
- Promotes need for supplements
- Recommendations based on a single study
- Simplistic conclusions drawn from a complex study
- Recommendations based on studies published without review by other researchers

- Dramatic statements that are refuted by reputable scientific organizations and peer-reviewed research
- Recommendations made to help sell a product
- Reliance on testimonials, anecdotes, and endorsements by celebrities or athletes

Some classic examples of Fad Diets include the Atkins and South Beach diets, popular with people trying to lose large amounts of weight. Some diets that have caught the fancy of SEAL and SWCC candidates (and Operators) include Zone, Paleo, and Warrior. A common theme with these diest is restriction of the intake of carbohydrates. As I have emphasized previously, adequate carbohydrate intake is essential to support strenuous physical training by serious athletes including candidates for BUD/S and BCT. Any diet will lead to weight loss if it results in reduced calorie intake (assuming energy expenditure does not decrease at the same time). Diets such as Zone and Paleo may work for people who exercise less than an hour a day, but are unlikely to provide adequate CHO for people training 2-3 hours a day. Some people follow these diets rather loosely, and may supplement them with additional CHO to satisfy their training needs. Strict adherence to the Zone places an unnecessary burden on the individual to maintain very specific ratios of CHO/FAT/PRO and results in inadequate intake of calories and carbohydrates. The true Paleo diet is less clearly defined, but while the goal of minimizing processed foods is worthy, the loss of grains, beans, potatoes and dairy creates big nutritional gaps that are hard to fill from other sources.